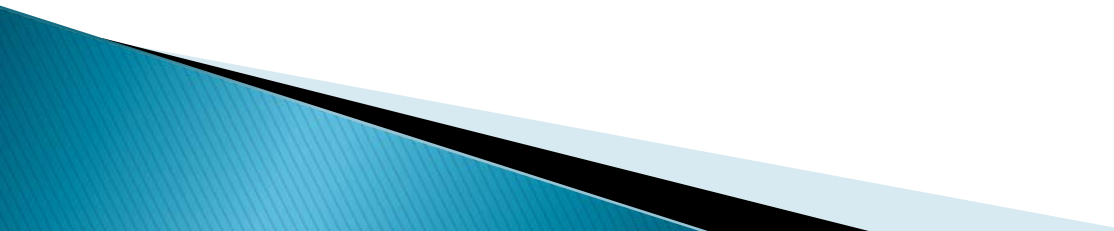


# Water Plan Update 2013 Tribal Advisory Committee

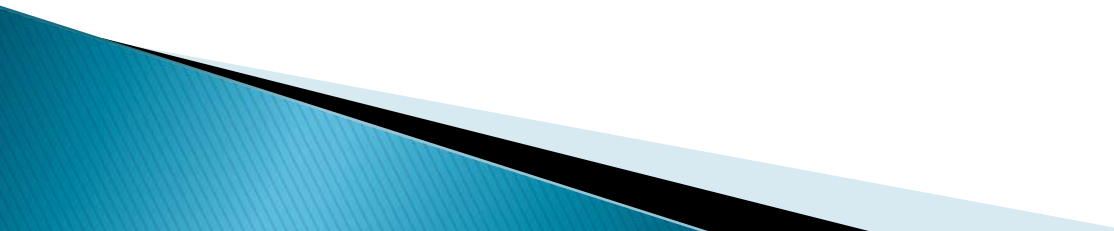
August 5, 2011

Michael Perrone – Dept. of Water Resources

# Message

- ▶ Protecting and restoring nature has financial benefits: avoids costs, saves money
  - ▶ Protecting nature has more beneficiaries than many people realize
  - ▶ Can reduce conflict between water management and ecosystem restoration
- 

# Target Audience Perspective

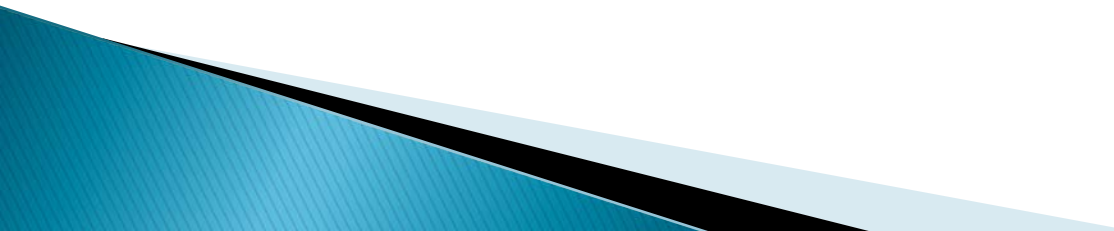
- ▶ Nature's benefits are free, worth nothing
  - ▶ See only cost side of habitat projects
  - ▶ Financial benefit not obvious
- 



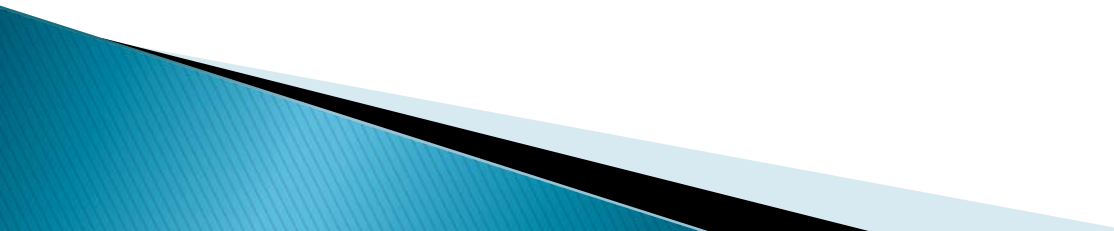
# Nature's Services

- ▶ Update 2013– new topic
- ▶ Goods and services from Rivers and Floodplains
- ▶ \$\$ Value of nature's benefits

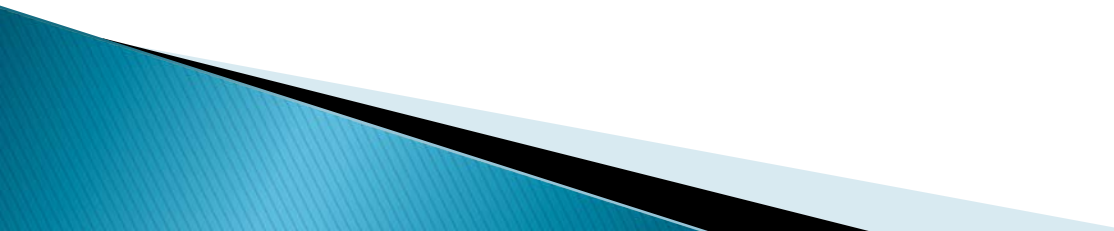
# Project Scope

- ▶ Evaluate costs when nature doesn't provide what we want--and we have to buy it
  - ▶ Represent nature's values in economic terms
  - ▶ Narrow scope--impossible to put \$ value on all that nature provides
- 

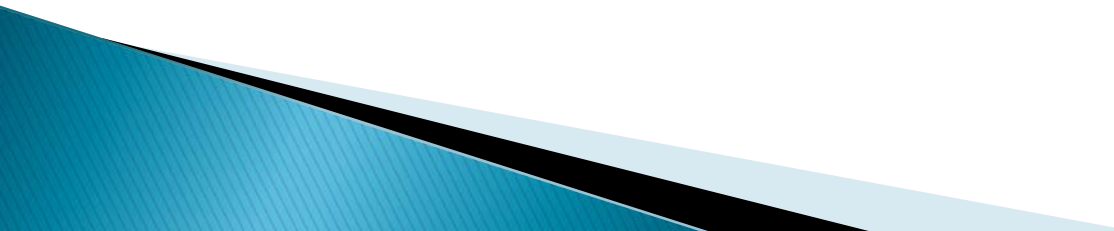
# Technical Approach

- ▶ Engineered Facilities Replace Lost Goods and Services
  - ▶ Cost of Facilities = Cost of NOT protecting nature
  - ▶ Include Construction, Land, O&M, Debt Service
- 

# Not a complete valuation

- ▶ Not all Goods or Services
  - ▶ Not all Aspects of each Service
  - ▶ Not all Costs for Service
  - ▶ Not Statewide—Only local examples
- 

# Nature's Goods and Services

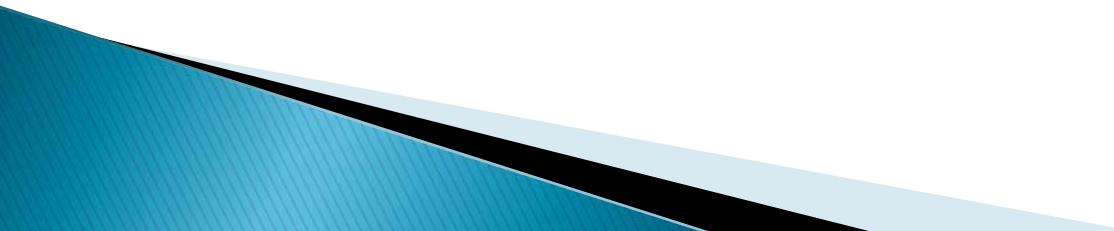
- ▶ Fish
  - ▶ Erosion control by floodplains
  - ▶ Clean water
  - ▶ Groundwater recharge
  - Later:
  - ▶ Carbon storage by plants
  - ▶ Subsidence reversal in Delta
- 



## Nature's way

- ▶ Fish
- ▶ Erosion control
- ▶ Clean water
- ▶ Groundwater recharge

## Man-made way

- ▶ Hatcheries
  - ▶ Riprap on levees
  - ▶ Water treatment plants
  - ▶ Recharge basins
- 

# Fish Hatcheries

- ▶ 7 hatcheries for salmon and steelhead

O&M = \$7.3 million/yr

Construction = \$10--  
\$30 million

Today's cost to  
build = up to  
\$210 million



# Other Fish Culture

- ▶ Commercial—Tilapia, Catfish, Sturgeon
- ▶ Hard to get Private Sector Cost Data

# Erosion control -- Riprap

- ▶ 835,000 feet of riprap—Sacramento River Basin
- ▶ About \$3,000 per foot—Today's price
- ▶ Worth \$2.6 Billion



# Erosion control (cont.)

## Concrete-lined stream channels

- ▶ Common in urban areas
- ▶ Searching for cost figures



# Drinking-water treatment

## Sacramento Plants

- ▶ 2 Plants
- ▶ Rehab \$157 M, plus \$10 M/year debt service

## San Bruno Plant

- ▶ Upgrade \$175 M



# How you can Help

- ▶ Provide cost numbers
  - ▶ Link us with people who have numbers
  - ▶ Review the report
  - ▶ Spread the word
- 
- ▶ [mperrone@water.ca.gov](mailto:mperrone@water.ca.gov)
  - ▶ [ealejand@water.ca.gov](mailto:ealejand@water.ca.gov)